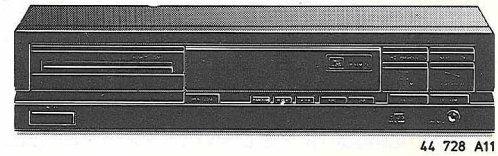
Compact disc player CD600/00R/05R/07R/17R

CD610/00B/00R/05R/07R/17R

Service
Service
Service



44 728 A11

Service Manual

COMPACT disc DIGITAL AUDIO

CONTENTS

1 Operations
2 Technical data
Servicing hints
Exploded view and parts list mechanical components
3 Measurements and adjustments
Blockdiagram
Circuit diagram
Panel data
Wiring diagram
Partslist electrical components
4 Modifications

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

CLASS 1
LASER PRODUCT
3122 110 03420

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviço

PHILIPS

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

Subject to modification
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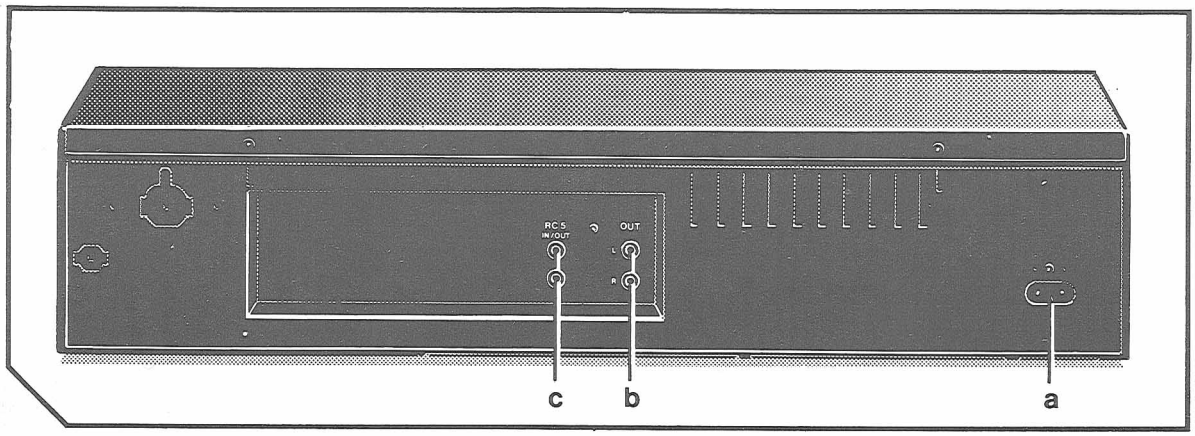
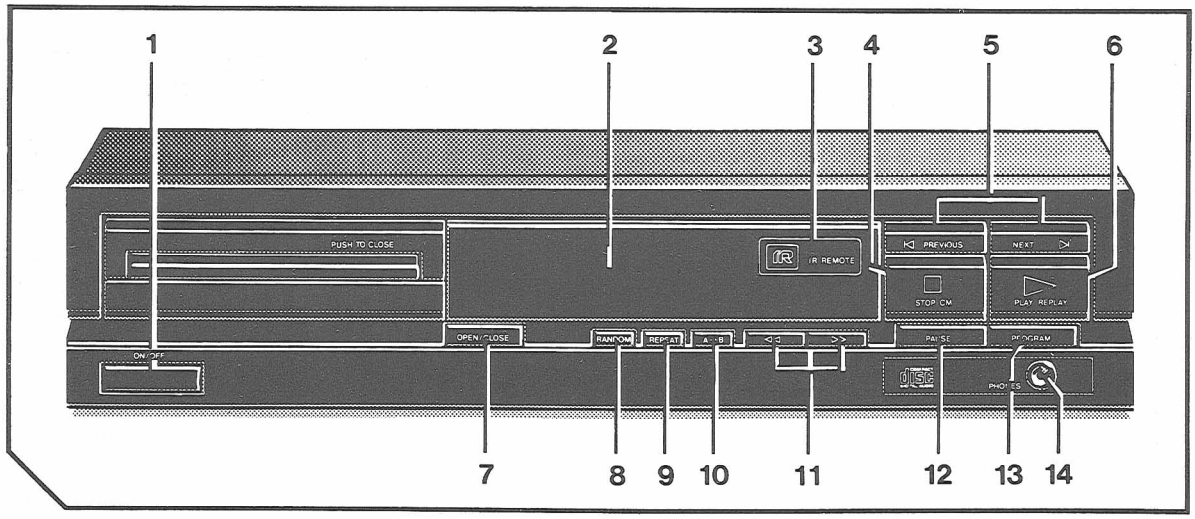
PHILIPS

Published by Service Consumer Electronics





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OPERATION

Explanation of keys

1 ON/OFF
For switching on and off.

2 DISPLAY
Informs you about the functioning of the player.
Displays details from the disc contents list.

3 IR REMOTE (not for CD600)
Receives the signals from the remote control.

4 STOP/CM
For stopping play (STOP)
For erasing a programme (CM = Clear Memory).

5 PREVIOUS and NEXT
For selecting another track during play.
For selecting a track number to start play.
For selecting track numbers when compiling a programme.
(PREVIOUS from high to low and NEXT from low to high.)

6 PLAY/REPLAY
For starting play (PLAY)
For returning to the beginning of a track (REPLAY).

7 OPEN/CLOSE
For opening and closing the disc tray.

8 RANDOM
For playing in random order.

9 REPEAT
For repeating a disc or a programme.

10 'A-B'
For setting the starting and stopping point of a passage to be repeated.

11 '◁◁ ▷▷'
For fast search to a particular passage during play.
('◁◁' backwards and '▷▷' forwards.)

12 PAUSE
For interrupting play.
For holding play at the start of a disc, track or passage.

13 PROGRAM
For storing track numbers in a programme.
For erasing track numbers from a programme.
For checking a programme.

14 PHONES
For connection of headphones

CONNECTIONS

a. Connection for the mains lead.
b. **OUT L R**: for the connecting cable to the amplifier.
- Insert a red plug into the 'R' socket (right-hand channel) and the other plug into the 'L' socket (left-hand channel).
- Insert the two other plugs into the corresponding sockets of the CD or AUX input of your amplifier. You can also use the TUNER or TAPE IN connection, but **never** the PHONO input. This is not suitable for Compact Disc reproduction.

c. **RC5 IN/OUT**: for a remote control system.
Use this connection for:
- Connecting up the equipment when you are incorporating the player in a PHILIPS HiFi system with its own remote control system.
- Connecting the remote control receiver EM 2200, available as an accessory, if the siting of the player prevents its IR REMOTE eye from receiving the signals from the remote control directly.

TECHNICAL DATA

General

1. Mains voltage	: /00R/05R: 220, 240 Volt (+/– 10%)
	: /07R/17R: 117 Volt
2. Mains frequency	: 50-60 Hz
3. Mains voltage selection	: By soldering (220/240 Volt-version)
	By changing transformer (110/127 Volt-version)
4. Power consumption mains, operated	: 15 W

External RC-5 connection

Specification: V-in Low: from -2,0 V to +1,6 V
V-in High: from +3 V to +7,5 V
R-in: from 47 kOhm to 68 kOhm

Line output

Number of channels	: 2
Output voltage	: 2 Vrms +/– 2 dB
Unbalance Left-Right	: max. +/– 0,5 dB
Output resistance	: 1kOhm
Amplitude linearity	: max. +/– 0,15 dB from 20 Hz to 20 kHz
Phase non-linearity	: max. +/– 1,0° from 20 Hz to 20 kHz
Signal to noise ratio	: min 90 dB from 20 Hz to 20 kHz
Dynamic range	: min 80 dB from 20 Hz to 20 kHz
Total harmonic distortion + noise	: min 66 dB from 20 Hz to 20 kHz
Intermodulation distortion	: max. 0.05% (min 66 dB) from 20 Hz to 20 kHz
Out-band attenuation	: min 50 dB above 24,8 kHz from 20 Hz to 20 kHz
Channel separation	: min 80 dB from 20 Hz to 20 kHz
Muting during random access	: min 90 dB from 20 Hz to 20 kHz

Automatic switched de-emphasis with time constants: 15/50 µs

Headphone

Output voltage	: Max. 2 Vrms +/– 2 dB
Unbalance Left-right	: Max. +/– 0,5 dB
Output resistance	: 150 Ohm
Load impedance range	: 32 Ohm to 600 Ohm
Output power	: Max. 6 mW into 32 Ohm load
	Max. 10 mW into 150 Ohm load
	Max. 6 mW into 600 Ohm load

Dimensions and weight

Place and height of feet acc. to Philips C6 specification

Apparatus tray closed	W×D×H	: 420 x 280 x 90/104 mm
Apparatus tray open	W×D×H	: 420 x 423 x 90/104 mm
Weight		: 3,8 kg

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SERVICING HINTS

In the set chip components have been applied.
For disassembly and assembly of chip components see the figure below.

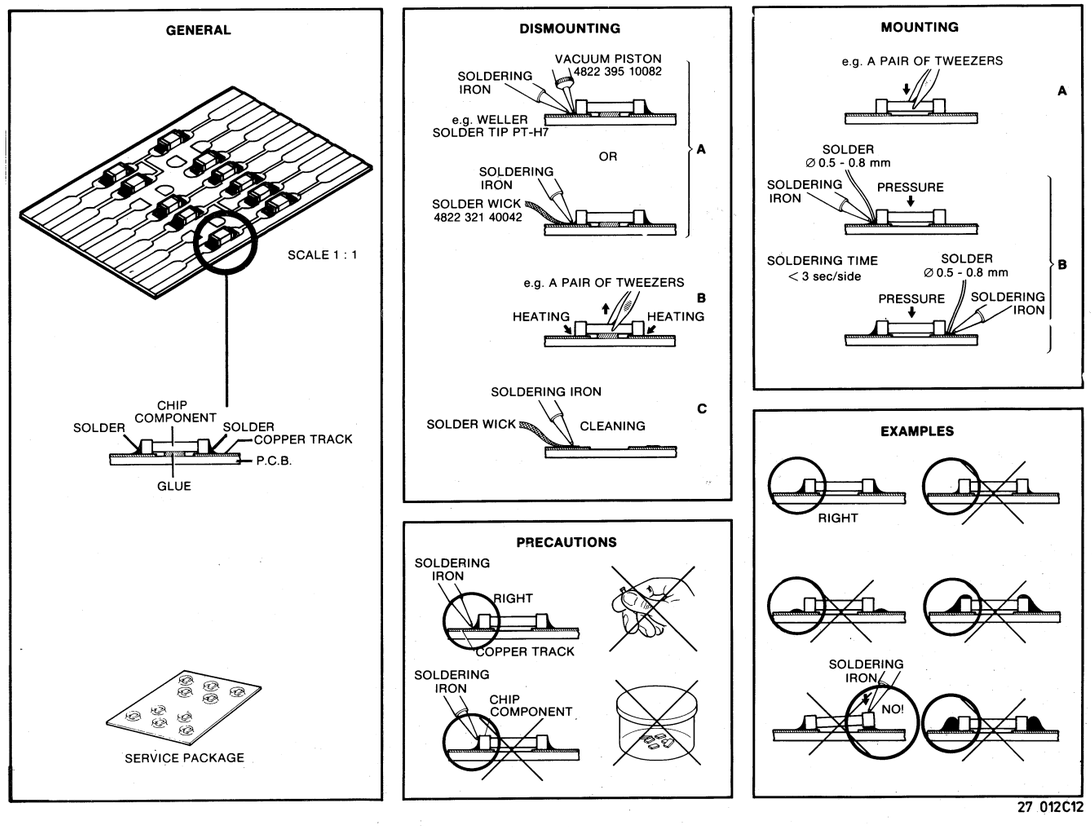
The disc should always rest properly on the turntable.
To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a seperate disc hold-down should be used.
(See drawing "Service disc hold-down")

The set can function normally then.
Code number of the disc hold-down is 4822 462 50383.

When the tray mechanism has been disassembled, the tray switch must be activated immediatly after pressing the play button in order to ensure normal operation. By servicing the apparatus in the upside down position it is also possible to short cicuit points A and B temporarly instead of activating the switch.

SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A)	4822 397 30096
Disc 65 min 1 kHz without pause	4822 397 30155
Max. diameter disc(58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
Service cable (4p)	4822 321 21284
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Green LED CQY G11	5322 130 32182



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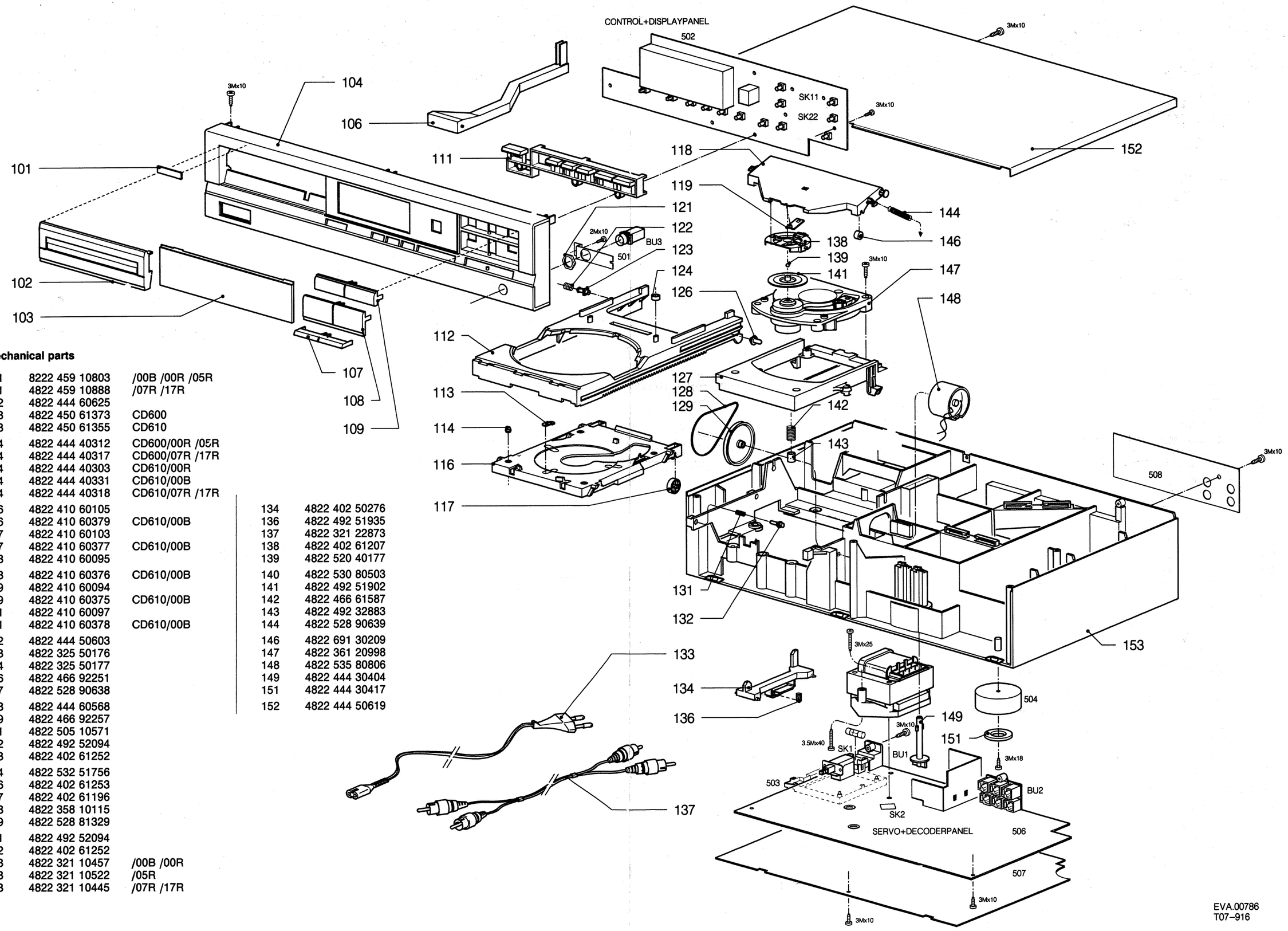

Mechanical parts

101	8222 459 10803	/00B /00R /05R
101	4822 459 10888	/07R /17R
102	4822 444 60625	
103	4822 450 61373	CD600
103	4822 450 61355	CD610
104	4822 444 40312	CD600/00R /05R
104	4822 444 40317	CD600/07R /17R
104	4822 444 40303	CD610/00R
104	4822 444 40331	CD610/00B
104	4822 444 40318	CD610/07R /17R
106	4822 410 60105	
106	4822 410 60379	CD610/00B
107	4822 410 60103	
107	4822 410 60377	CD610/00B
108	4822 410 60095	
108	4822 410 60376	CD610/00B
109	4822 410 60094	
109	4822 410 60375	CD610/00B
111	4822 410 60097	
111	4822 410 60378	CD610/00B
112	4822 444 50603	
113	4822 325 50176	
114	4822 325 50177	
116	4822 466 92251	
117	4822 528 90638	
118	4822 444 60568	
119	4822 466 92257	
121	4822 505 10571	
122	4822 492 52094	
123	4822 402 61252	
124	4822 532 51756	
126	4822 402 61253	
127	4822 402 61196	
128	4822 358 10115	
129	4822 528 81329	
131	4822 492 52094	
132	4822 402 61252	
133	4822 321 10457	/00B /00R
133	4822 321 10522	/05R
133	4822 321 10445	/07R /17R
134	4822 402 50276	
136	4822 492 51935	
137	4822 321 22873	
138	4822 402 61207	
139	4822 520 40177	
140	4822 530 80503	
141	4822 492 51902	
142	4822 466 61587	
143	4822 492 32883	
144	4822 528 90639	
146	4822 691 30209	
147	4822 361 20998	
148	4822 535 80806	
149	4822 444 30404	
151	4822 444 30417	
152	4822 444 50619	

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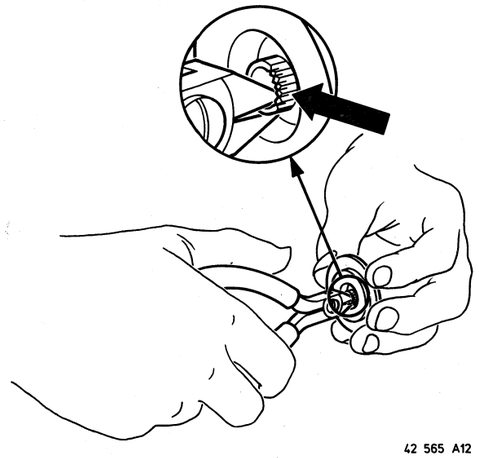
T07–916



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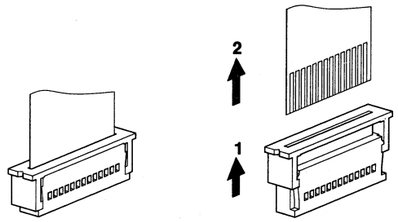

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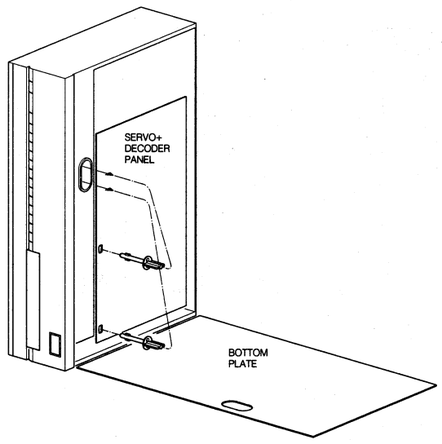
T28/822

MEASURING AND ADJUSTMENT POSITION OF THE SET



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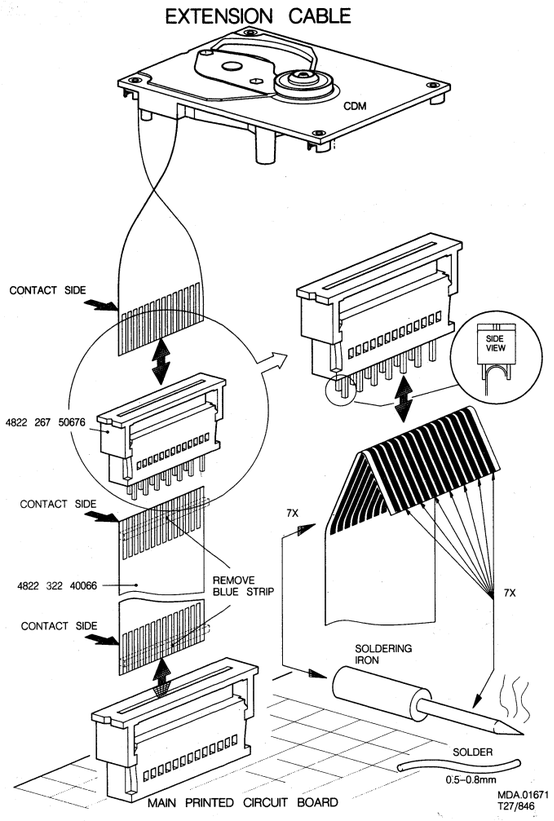
EXTENSION CABLE



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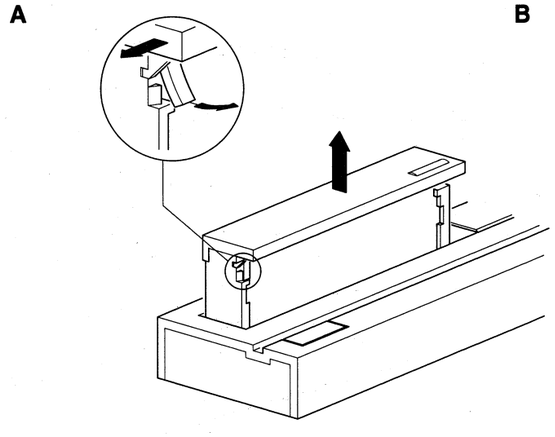
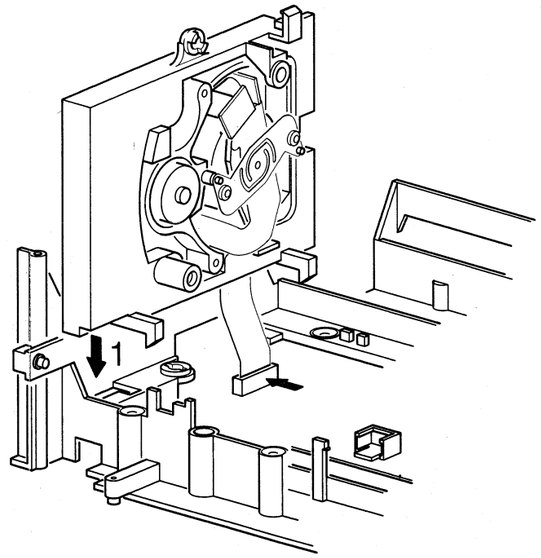
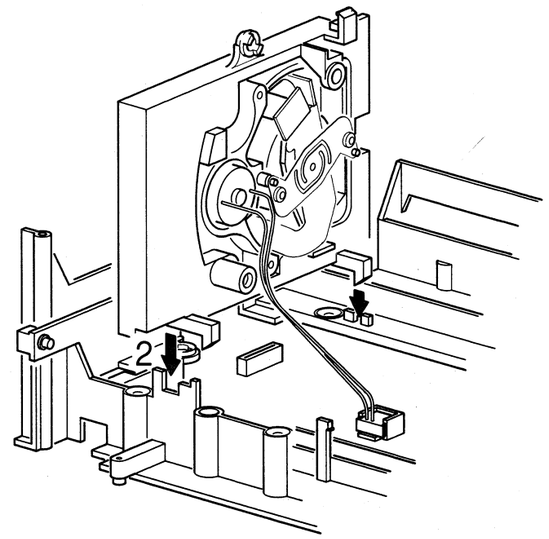
CABINET DISASSEMBLY HINTS



FOIL CONNECTION POSITION.



FLAY–SERVICE POSITION



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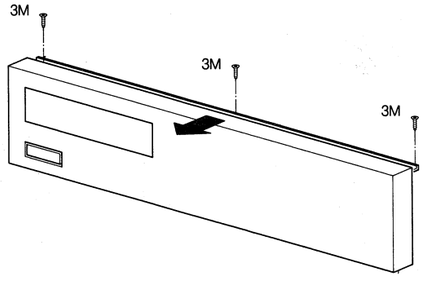
SERVICE POSITION PLAY



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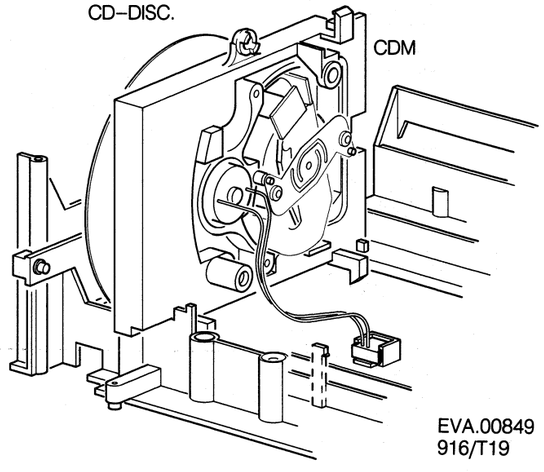


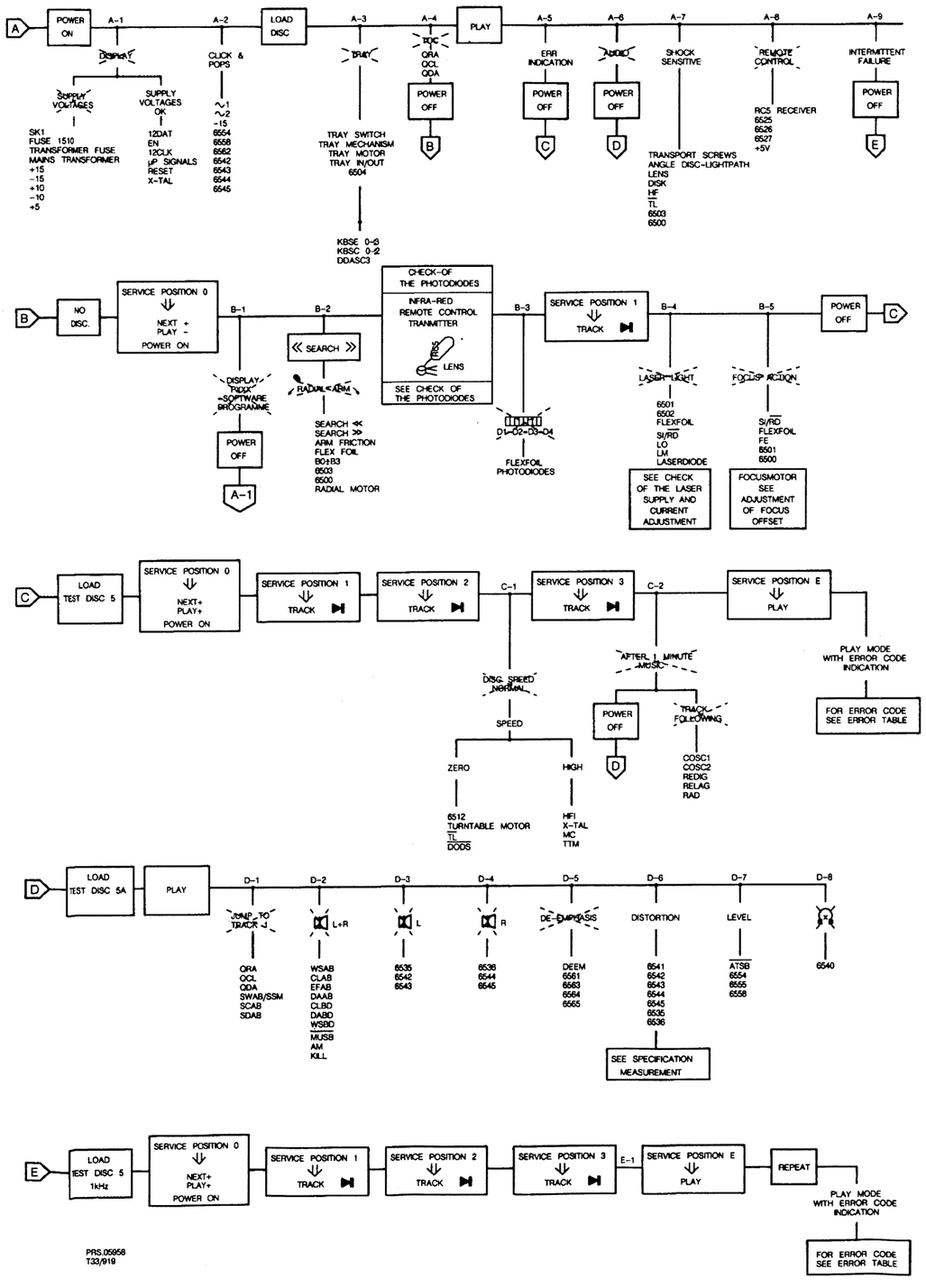
EVA.00849
916/T19

TROUBLE SHOOTING (FAULT FINDING TREE)

START-UP PROCEDURE

Follow the path of the faultfinding tree beginning at the top left. Perform the actions you come across in the various blocks.
Look at the various side branches to find out if the information you see there applies to your problem. If, for instance, you find the indication "display" this means that no picture appears on the display.

If you establish this fault, follow the branch and perform the recommended actions. Check the signals mentioned. In a number of branches further reference is made to measurements you could carry out.
These measurements are explained in several tables further on in this manual.



PRS.05958
T33/919

B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode	◇	⌀			Remarks
1	D2 D1 D3 D4	power on	4 6 7 8	–	–	signal 4E6E7E8	Signal depends on Distance lens ↔ IR LED of remote control

T-22407A

B-4 CHECK OF LASER SUPPLY

The laser, the lasersupply plus the monitor diode form a feedback system.
A defect in the lasersupply may result in the destruction of the laser. If, in that case, the laser is replaced, (= complete D.C.M.-unit) the new laser will also become defective. However, it is impossible to check and repair a feedback system if a link is missing. For this reason the laser supply can be checked with teh replacement circuit for laser assembly.

Step	Signal	Mode	◇		Remarks
1	LO	serv. pos. 2 SK	9 – V	1.8<V <2.3	
	LM		11 – V	170<mV <220	PRS05539
2	LO	serv. pos. 2 SK	9 – V	1.8<V <2.3	
	LM		11 – V	170<mV <220	PRS05540
3	LO	Power on	9 – V	0V ± 0.2V	No light

T-22407B

B-4 LASER CURRENT ADJUSTMENT

Step	Signal	Mode	◇	⌀			Remarks
1	–	Power off	1 – Ω	R3520	1kΩ	–	Pre-adjustment Ohmic value
2	Eye-pattern HF	Power on Test disc 5 play	V	–	–	EYE pattern	
3	laser current = voltage across R3508	Test disc 5 play track 1	1 – V – 2	R3520	50 mV DC	–	High-ohmic measurement

T-22407C

B-5 ADJUSTMENT OF FOCUS-OFFSET

Step	Signal	Mode	◇	⌀			Remarks
1	–	Power on no disc	–	R3568	–	–	adjust for optical mid-position of the focus motor
2	FE LAG	Play Test disc 5 Track 1	27	R3568	400mV ± 40 mV DC	–	fine adjustment

T-22407D

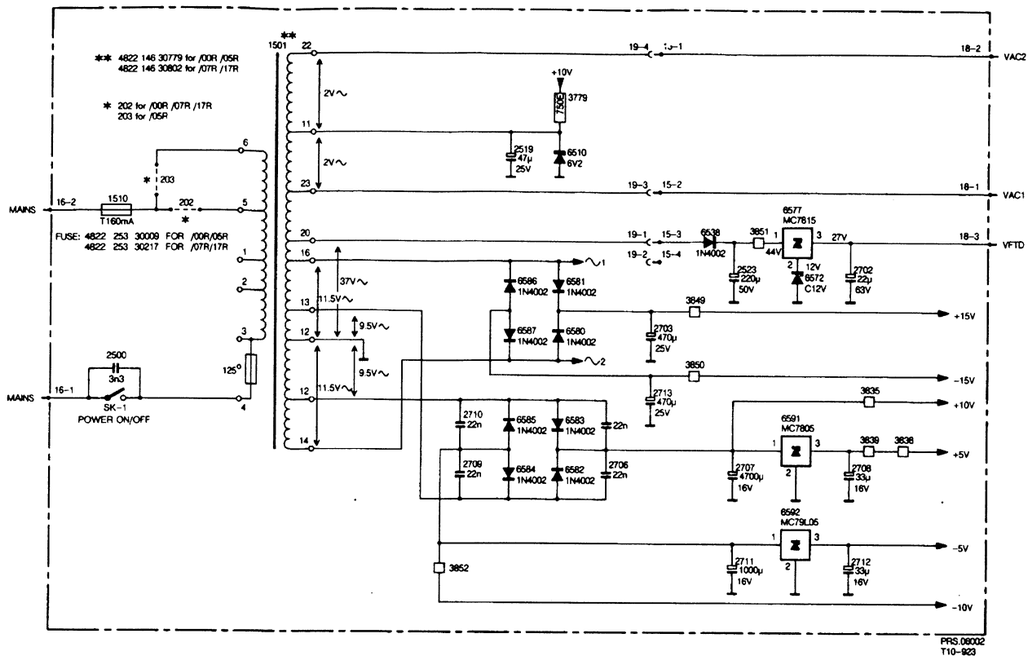
ERROR TABLE

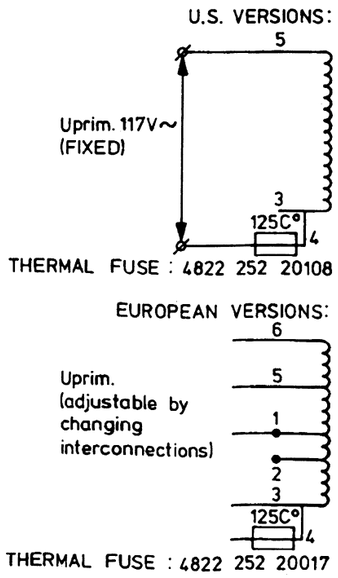
System errors

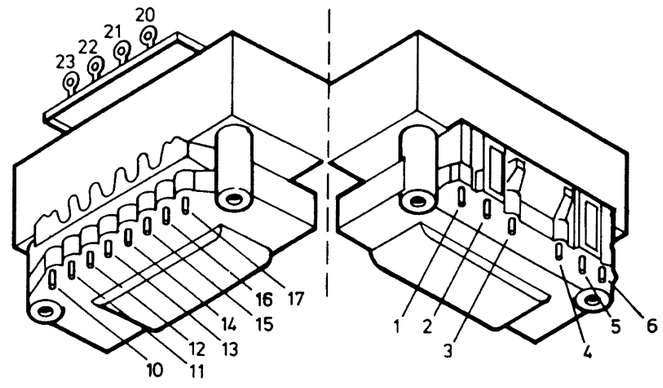
Er 01: RD pulse is missing. Check the start capacity Sc, the RD signal and the photodiode signal processor. (Starting error)
Er 02: $\overline{TL}$ pulse is missing during start-up. Check the $\overline{TL}$ signal, the HF-signal and the Photodiode signal processor. (Starting error)
Er 03: Lead-in track not found. Check the disc used. Check also that the radial arm rests against the inside. Check the RE-dig signal and the Radial error processor. (Starting error)
Er 04: Too many $\overline{TL}$ pulses during play. Check the quality of the disc used. Check the HFD signal. (Error during PLAY)
Er 05: $\overline{TL}$ pulse is low for more than 50 msec. Check the disc used. Check the HF-in signal and the photodiodes (Error during PLAY)
Er 06: No $\overline{TL}$ pulse received within 0.5 sec. in case of track jumping. Check the RE-lag circuit. (Error during SEARCH or NEXT/PREVIOUS)
Er 07: Subcode error. In case of track loss during play the information of the subcode is used to determine the place of the last information that was still well readable. In case of an interruption of HF or other signals, this will lead to Er 07. (Error during PLAY)
Er 08: TOC error (Table of Contents). Check the quality of the disc used. Check the initial speed of the turntable motor and the motor control. Check also that the radial arm rests against the inside. (Starting error)

Operating errors

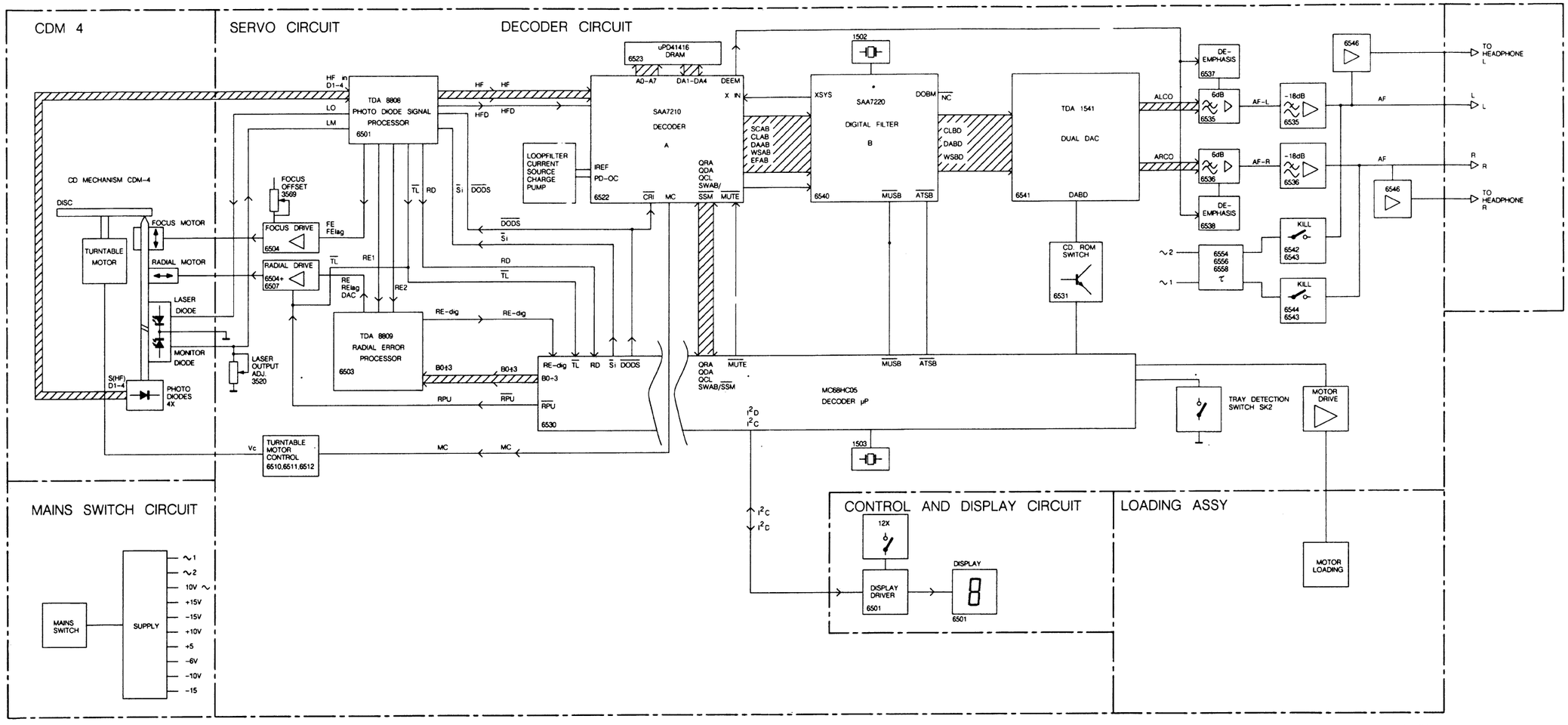
Er 30: NEXT when repeat is off.
Er 31: PREVIOUS when repeat is off.
Er 32: INDEX selected when no track selected.
Er 33: Selected index does not exist on this CD.
Er 34: Review error: no program.
Er 35: Program memory full.
Er 36: Programmed track is non existing on this CD.
Er 37: Selected track is non existing on this CD.
Er 60: Fast forward bound.
Er 61: Fast reverse bound.







BLOCK DIAGRAM



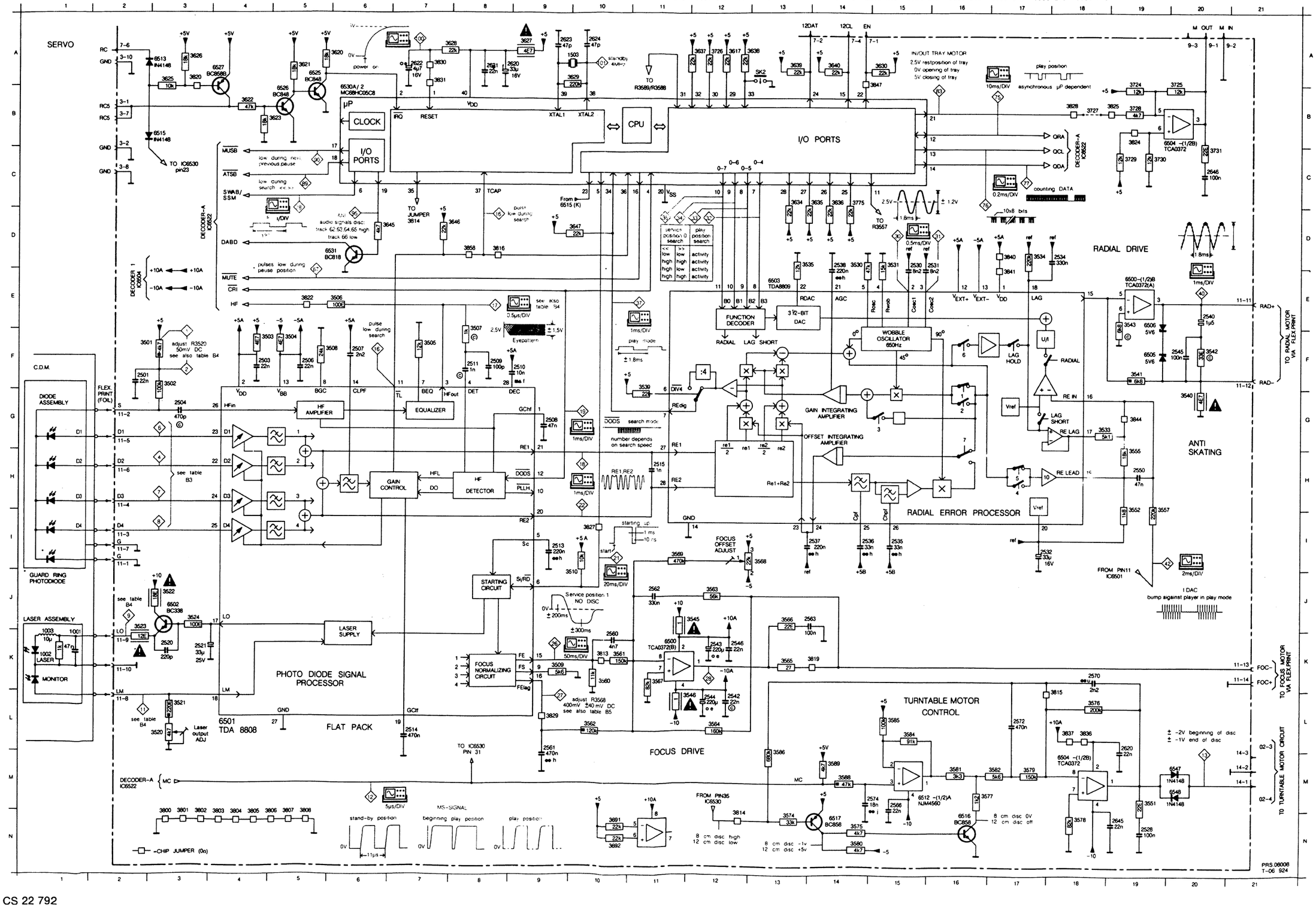
AGC – Automatic Gain Control
B0-B3 – Control bits for radial circuit
BEQ – Equalizer reference current input
BGC – DC and LF gain control reference input
Cosc1 – Capacitor wobble oscillator
Cosc2 – Capacitor wobble oscillator
DEC – Decoupling input of inkruat bypass
DET – HF detector voltage input
DIV4 – Divide by 4 input
DODS – Drop out detector suppression
D1+4 – Photodiode currents
FE – Focus error signal
FE lag – Focus error signal for LAG network
HF – HF output for DEMOD
HFD – HF detector output for DEMOD
HF-in – HF current input to HF amplifier
HF-out – HF amplifier and equalizer voltage output
LM – Laser monitor diode input
LO – Laser amplifier current output
MC – Motor control signal
offset IN – Offset control input
offset OUT – Offset control output
PLLH – PLL on hold output
RADout – output of RE2-RE1 input
RE – Radial error signal (Amplified RE_2-RE_1 currents)

Rosc – Resistor wobble oscillator
Rwob – Wobble generator input
RE1 – Radial error signal 1 (summation of amplified currents D_3 and D_4
RE2 – Radial error signal 2 (summation of amplified currents D_1 and D_2
RE dig – Radial error digital
RE lag – Radial error signal for LAG network
Sc – Starting up capacitor input
Si/RD – On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesful.
TL – Track loss output signal
TTM– – Control voltage for turntable motor
TTM+ – Control voltage for turntable motor
Vext– – Supply connection
Vext+ – Supply connection
TCMP – Turntable control motor pulse

ATSB – Attenuation of Audio level in Search position (Cueing)
CD ROM Switch – Digital Data information on disc signal
CEFM – Clock Eight-to-Fourteen Modulator
CLAB – Clock signal Decoder-A to Filter-B
CLBD – Clock signal Filter-B to DAC
CREF – Reference Current
CRI – Counter Reset Inhibit
DAAB – Data signal Decoder-A to Filter-B
DABD – Data signal Filter-B to DAC
DEEM – Deemphasis
DOBM – Digital out signal
EFAB – Error flag Decoder-A to Filter-B
MUTE – Mute signal

MUSB – Soft Mute signal
PD/OC – Phase detector - oscillator control
QCL – Q-channel Clock signal
QDA – Q-channel Data signal
QRA – Q-channel Request Aknowledge
SCAB – Subcode clock Decoder-A to Filter-B
SDAB – Subcode data Decoder-A to Filter-B
SWAB/SSM – Subcode Word/Start-stop motor signal
WSAB – Word select Decoder-A to Filter-B
WSBD – Word Select Filter-B to DAC
XIN – Oscillator signal in Decoder-A
XSYS – Oscillator signal out Filter-B

1001 J 1 2506 F 5 2514 L 7 2532 I 18 2542 K12 2561 L 9 2620 A 9 2646 C20 3507 E 8 3523 J 2 3539 F11 3551 M19 3563 J12 3568 I 13 3579 M17 3588 M14 3625 A 3 3635 C14 3646 D 8 3729 B19 3803 M 4 3814 M12 3825 B19 3837 L18 6500 J11 6512 M15 6527 A 4
1002 K 1 2507 F 6 2515 H11 2534 D18 2543 K12 2562 J11 2621 A 8 3501 F 2 3508 F 6 3524 J 3 3540 F20 3552 H19 3564 L12 3569 I 11 3580 N14 3589 L14 3626 A 3 3636 C14 3647 D10 3730 B19 3804 M 4 3815 K18 3827 I 10 3840 D17 6502 J 3 6513 A 3 6530 A 6
1003 J 1 2508 G 9 2520 K 3 2535 I 15 2544 K12 2563 J14 2622 L19 3502 F 3 3509 K 9 3530 D14 3541 F19 3555 G19 3557 H19 3564 N10 3574 M13 3581 M16 3617 A12 3627 A 9 3637 A12 3724 A19 3731 B20 3805 M 4 3816 D 8 3828 B18 3841 D17 6503 E13 6515 B 3 6531 D 6
1503 A10 2509 F 8 2521 K 3 2536 I 15 2545 F20 2566 M15 2623 A 9 3503 E 4 3510 I 10 3531 D15 3542 F20 3557 H19 3564 N10 3575 N14 3582 M17 3589 L14 3620 A 6 3628 A 7 3638 A13 3725 A20 3775 C14 3806 M 5 3819 K14 3829 L 9 3844 G19 6504 L18 6516 M16 6547 M20
2501 F 2 2510 F 9 2528 N19 2537 I 14 2546 K12 2570 K18 2623 A 9 3504 E 5 3520 L 3 3532 G18 3543 E19 3560 K10 3565 K13 3576 K18 3583 M14 3621 A 5 3629 A10 3638 A13 3726 A12 3800 M 3 3807 M 5 3820 A 3 3830 A 7 3847 A15 6504 B20 6517 M14 6548 M20
2503 F 4 2511 F 8 2530 D15 2538 D14 2550 H19 2572 L17 2645 M19 3505 F 7 3521 L 3 3534 D17 3545 J12 3561 K10 3566 J13 3577 M17 3622 B 4 3630 A15 3640 A14 3727 B18 3808 M 5 3822 E 5 3831 A 7 3858 D 8 6505 F19 6525 A 5 SK2 A13
2504 G 3 2513 I 9 2531 D16 2540 E20 2560 J10 2574 M15 3506 E 6 3522 J 3 3535 D13 3546 K12 3562 L10 3567 K11 3578 M18 3586 L13 3623 B 5 3634 C13 3645 D 6 3728 B19 3802 M 3 3813 K10 3824 B19 3836 L18 6500 D19 6506 E19 6526 A 5



CS 22 792

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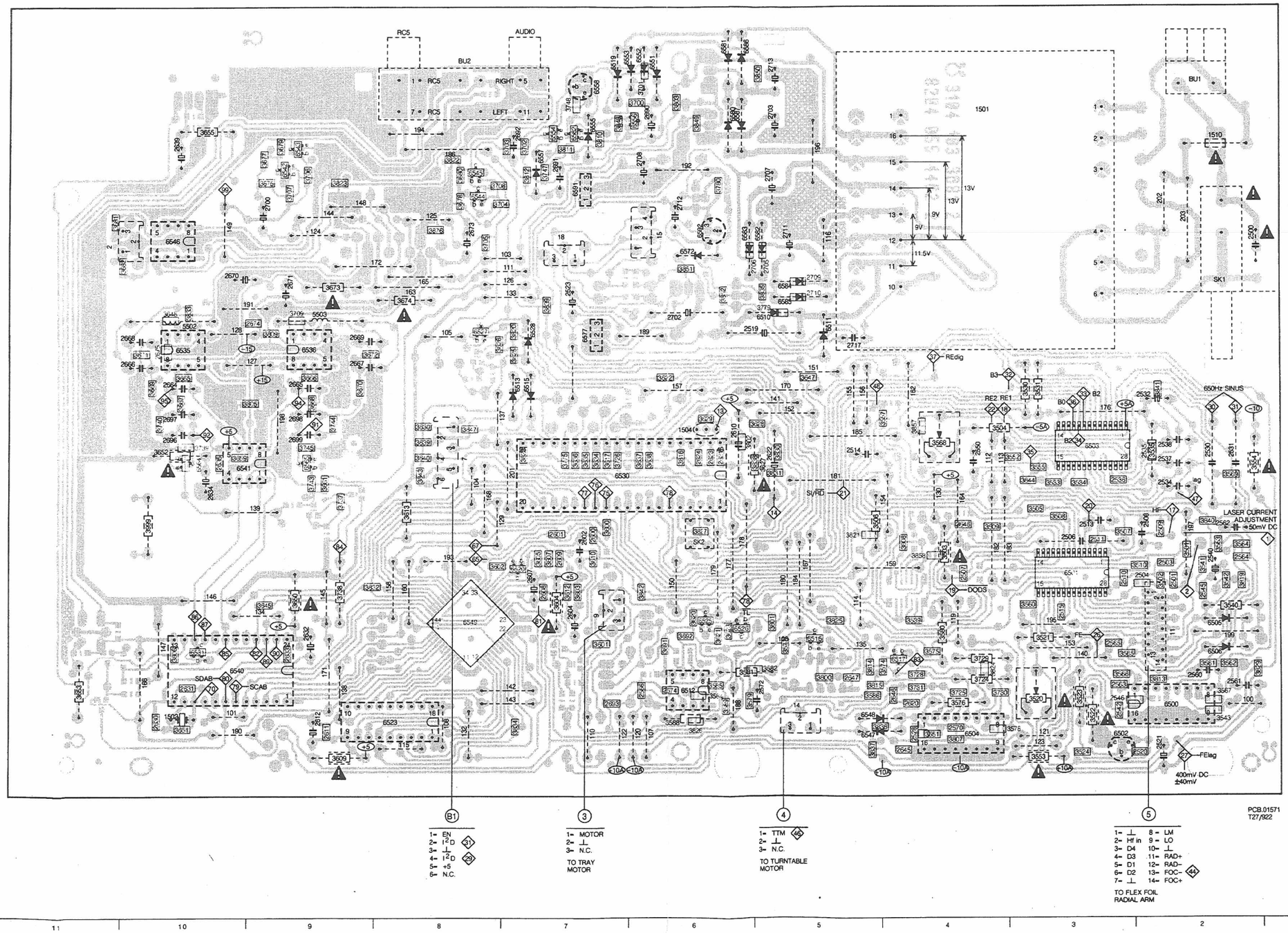
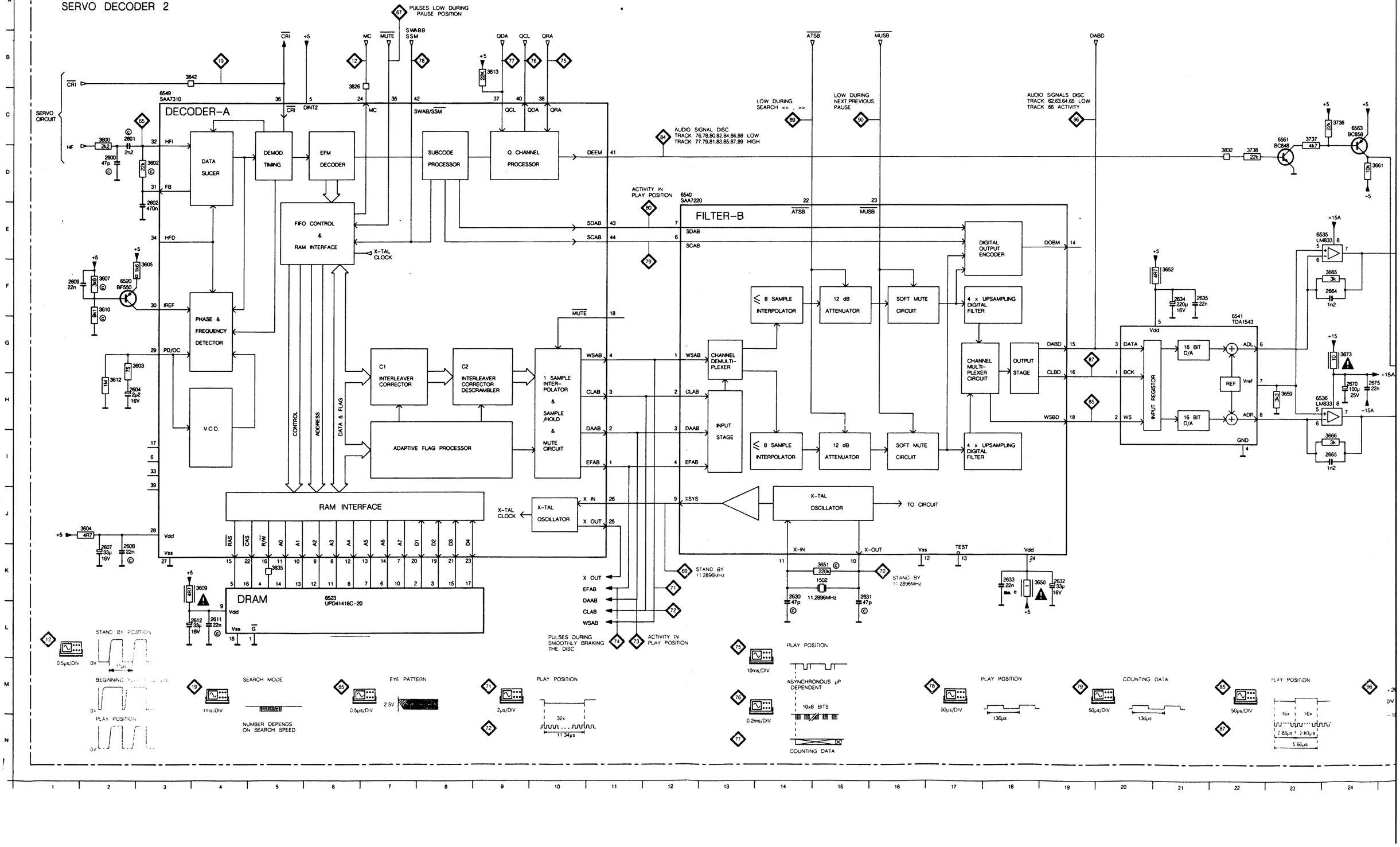

RC5
AUDIO
BU2
RIGHT
LEFT
BU1
SK1
SK2
1501
1510
2500
13V
9V
11.5V
650Hz SINUS
REdig
DODS
FEdig
SI/RD
HF
LASER CURRENT ADJUSTMENT
±50mV DC
SDAB
SCAB
POSITION: STANDBY
POSITION: PLAY (BEGINNING)
POSITION: PLAY (NORMAL)
400mV DC ±40mV
PCB.01571
T27/922
XX
1J= BC848B
3J= BC858
6E= 6F= BC818
LA= G2= BF550
1L= BC848
B1
1= EN
2= I²D
3= ⊥
4= I²D
5= +5
6= N.C.
TO TRAY MOTOR
1= MOTOR
2= ⊥
3= N.C.
TO TURNTABLE MOTOR
1= TTM
2= ⊥
3= N.C.
1= ⊥
2= Hf in
3= D4
4= D3
5= D1
6= D2
7= ⊥
8= LM
9= LO
10= ⊥
11= RAD+
12= RAD-
13= FOC-
14= FOC+
TO FLEX FOIL RADIAL ARM

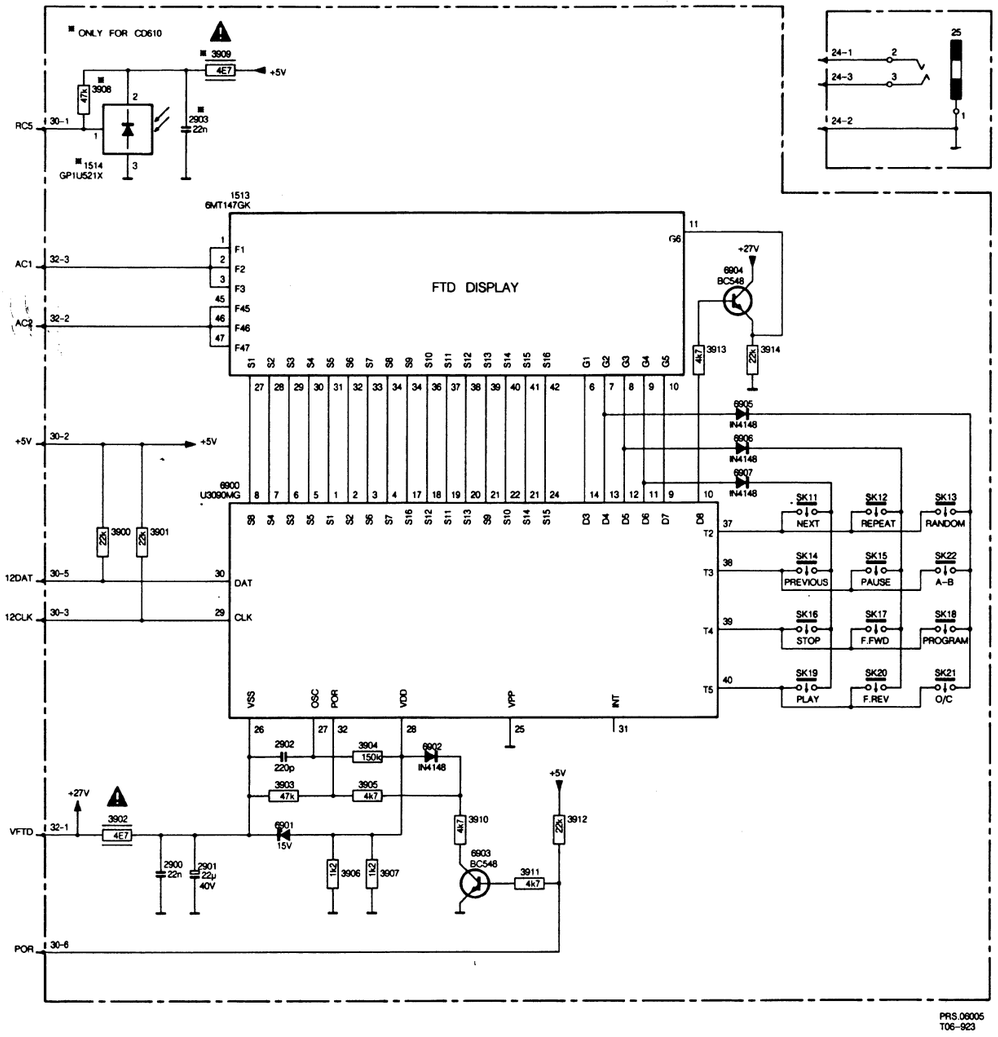
| | | |

1502	K15	2604	H 3	2611	L 4	2632	K19	2664	F24	2668	F28	2673	H30	2691	E27	2698	I 27	3602	D 3	3607	F 2	3613	B 9	3652	F21	3666	I 24	3670	H27	3674	F29	3678	H30	3682	G32	3703	E25	3707	F30	3737	C23	3743	I 25	3748	C27	3811	C29	3826
2600	D 2	2607	K 2	2612	L 4	2633	K18	2665	I 24	2669	H28	2674	F29	2692	E26	2699	I 26	3603	G 3	3609	K 4	3648	F28	3659	H23	3667	E26	3671	E27	3675	F30	3679	E31	3700	C27	3704	J30	3708	I 30	3738	D22	3744	H26	3776	F25	3812	D26	3832
2601	C 2	2608	K 2	2630	K14	2634	F21	2666	F27	2670	H24	2675	H24	2696	F26	2700	E30	3604	J 2	3610	F 2	3650	K19	3661	D25	3668	H26	3672	H27	3676	I 30	3680	H31	3701	D25	3705	C29	3709	I 28	3739	F27	3745	I 27	3809	H28	3822	H32	3833
2602	E 3	2609	F 1	2631	K15	2635	F21	2667	I 27	2671.	G29	2690	C27	2697	F27	3600	C 2	3605	F 3	3612	H 2	3651	K15	3665	F24	3669	E27	3673	G24	3677	E30	3681	F32	3702	D26	3706	G30	3736	C24	3740	F26	3747	D29	3810	C28	3823	H32	3835



Q CHANNEL PROCESSOR
DEEM
QDA
QCL
QRA
AUDIO SIGNAL DISC TRACK 76,78,80,82,84,86,88 LOW TRACK 77,79,81,83,85,87,89 HIGH
LOW DURING SEARCH << >>
LOW DURING NEXT,PREVIOUS, PAUSE
AUDIO SIGNALS DISC TRACK 62,63,64,65 LOW TRACK 66 ACTIVITY
ACTIVITY IN PLAY POSITION
6540 SAA7220
FILTER-B
ATSB
MUSB
SDAB
SCAB
DOBM
DIGITAL OUTPUT ENCODER
4 x UPSAMPLING DIGITAL FILTER
8 SAMPLE INTERPOLATOR
12 dB ATTENUATOR
SOFT MUTE CIRCUIT
MUTE
1 SAMPLE INTER-POLATOR & SAMPLE /HOLD & MUTE CIRCUIT
CHANNEL DEMULTI-PLEXER
INPUT STAGE
CHANNEL MULTI-PLEXER CIRCUIT
OUTPUT STAGE
DABD
CLBD
WSBD
6541 TDA1543
DATA
BCK
WS
16 BIT D/A
INPUT REGISTOR
REF
Vref
Vdd
GND
ADL
ADR
X-TAL CLOCK
X-TAL OSCILLATOR
TO CIRCUIT
X IN
X OUT
XSYS
X-IN
X-OUT
Vss
TEST
11.2896MHz
STAND BY 11.2896MHz
PULSES DURING SMOOTHLY BRAKING THE DISC
ACTIVITY IN PLAY POSITION
PLAY POSITION
2µs/DIV
32x
11.34µs
10ms/DIV
ASYNCHRONOUS µP DEPENDENT
10x8 BITS
0.2ms/DIV
COUNTING DATA
50µs/DIV
136µs
16x
2.83µs
5.66µs
+20V
0V
-15V
POWER ON
POWER OFF
6535 LM833
6536 LM833
6546 NJM4560
6553 1N4148
6652 1N4148
6519 1N4002
6551 1N4002
6558 BC548
6554 BC858C
6562 BC848
6555 BZX55 C3V9
6557 1N4148
6561 BC848
6563 BC858
6564 BC848
6565 BC848
6542 BC818
6543 BC818
6544 BC818
6545 BC818
LEFT
RIGHT
HP L
HP R
GND
LG
RG
PRS 05999
T-08 924

CS 22 795


* ONLY FOR CD610
3909
4E7
+5V
3908
47k
2903
22n
RC5
30-1
1514
GP1U521X
1513
6MT147GK
FTD DISPLAY
AC1
32-3
AC2
32-2
+27V
6904
BC548
3913
4k7
3914
22k
6905
IN4148
6906
IN4148
6907
IN4148
+5V
30-2
6900
U3090MG
3900
22k
3901
22k
12DAT
30-5
12CLK
30-3
DAT
CLK
SK11
NEXT
SK12
REPEAT
SK13
RANDOM
SK14
PREVIOUS
SK15
PAUSE
SK22
A-B
SK16
STOP
SK17
F.FWD
SK18
PROGRAM
SK19
PLAY
SK20
F.REV
SK21
O/C
VSS
OSC
POR
VDD
VPP
INT
2902
220p
3904
150k
6902
IN4148
3903
47k
3905
4k7
+27V
3902
4E7
VFTD
32-1
6901
15V
3910
4k7
3912
22k
6903
BC548
3911
4k7
2900
22n
2901
22µ
40V
1k2
3906
1k2
3907
POR
30-6
24-1
24-3
24-2
25
PRS.08005
T06-923

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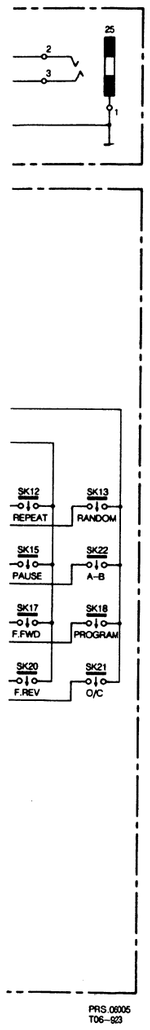

PRS.06005
T06-923

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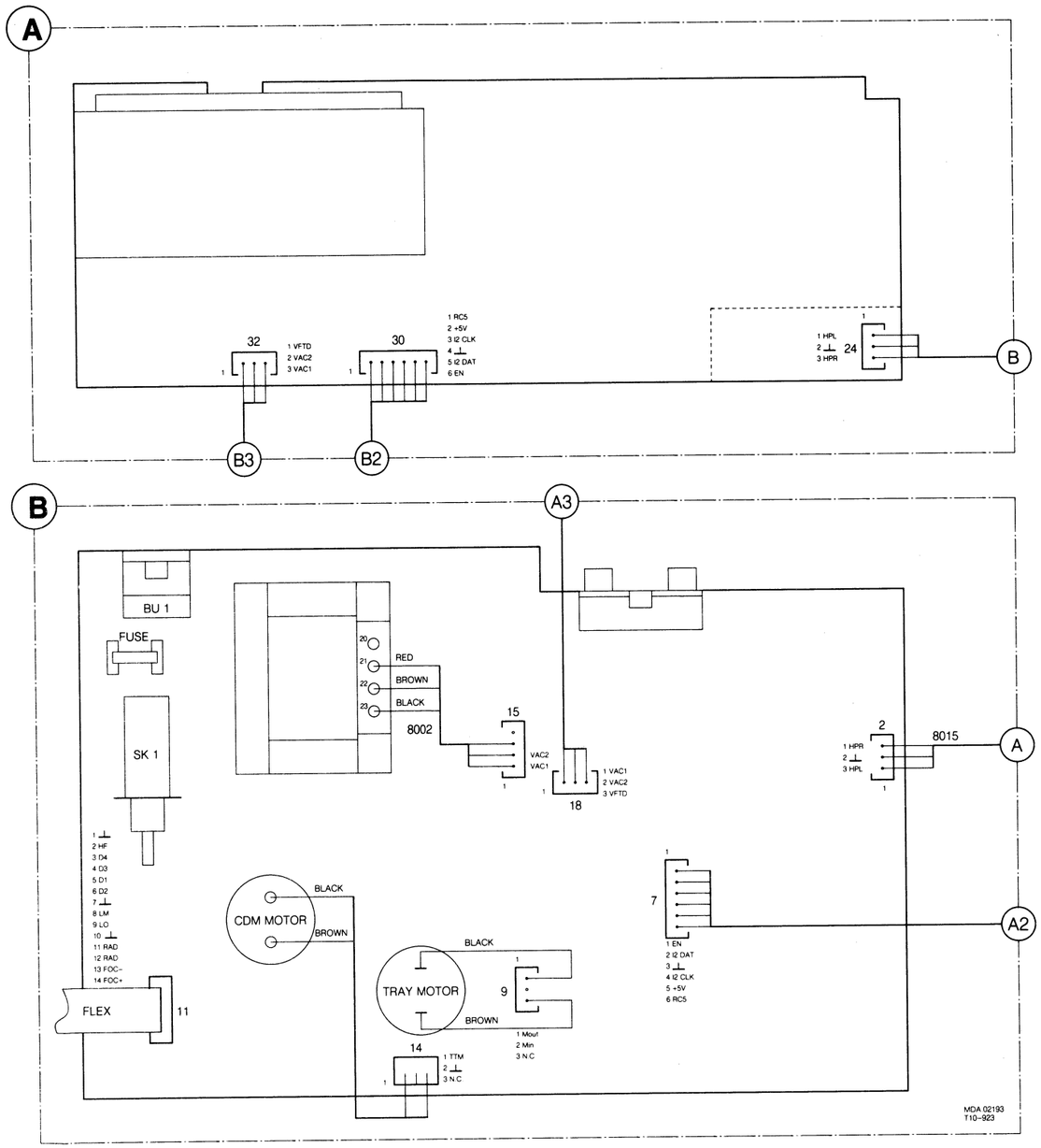

Electrical parts

2500	4822 126 10005	3,3nF 20% 400V
2501	4822 122 33147	22nF 20%
2503	4822 122 33147	22nF 20%
2504	4822 122 31727	470pF 5% 63V
2506	4822 122 10166	22nF 30% 16V
2507	4822 122 31644	2,2nF 10% 63V
2508	5322 121 42604	47nF 5% 63V
2509	4822 122 31765	100pF 5% 50V
2510	4822 122 32442	10nF 10% 50V
2511	4822 122 31746	1nF 5% 50V
2513	4822 121 42245	220nF 10% 63V
2514	4822 121 51252	470nF 5% 100V
2515	4822 122 31746	1nF 5% 50V
2519	4822 124 22027	47µF 20% 25V
2520	4822 122 31965	220pF 5% 63V
2521	4822 124 40272	33µF 20% 16V
2523	4822 124 41595	220µF 20% 50V
2528	4822 122 33104	100nF 10% 63V
2530	4822 121 51321	8,2mF 1% 63V
2531	4822 121 51321	8,2mF 1% 63V
2532	4822 124 40272	33µF 20% 16V
2534	5322 121 42661	330nF 5% 63V
2535	5322 122 31848	33nF 10% 63V
2536	5322 122 31848	33nF 10% 63V
2537	4822 121 42245	220nF 10% 63V
2538	4822 121 42245	220nF 10% 63V
2540	4822 124 41583	680nF 20% 50V
2542	4822 122 33147	22nF 20%
2545	4822 122 33104	100nF 10% 63V
2546	4822 122 33147	22nF 20%
2550	5322 121 42604	47nF 5% 63V
2560	4822 121 51314	4,7nF 5% 50V
2561	4822 121 51252	470nF 5% 100V
2562	5322 121 42661	330nF 5% 63V
2563	4822 122 33104	100nF 10% 63V
2566	4822 122 33147	22nF 20%
2570	4822 122 31644	2,2nF 10% 63V
2572	5322 121 42661	330nF 5% 63V
2574	4822 122 31759	18nF 10%
2600	4822 122 31772	47pF 5% 50V
2601	4822 122 31644	2,2nF 10% 63V
2602	4822 121 51252	470nF 5% 100V
2604	4822 124 41576	2,2µF 20% 50V
2607	4822 124 40272	33µF 20% 16V
2608	4822 122 33147	22nF 20%
2609	4822 122 33147	22nF 20%
2610	4822 124 22027	47µF 20% 25V
2611	4822 122 33147	22nF 20%
2612	4822 124 40272	33µF 20% 16V
2620	4822 122 33147	22nF 20%
2621	4822 122 33147	22nF 20%
2622	4822 124 22031	4,7µF 20% 63V
2623	4822 122 31772	47pF 5% 50V
2624	4822 122 31772	47pF 5% 50V
2630	4822 122 31772	47pF 5% 50V
2631	4822 122 31772	47pF 5% 50V
2632	4822 124 40272	33µF 20% 16V
2633	4822 122 33147	22nF 20%
2634	4822 124 40196	220µF 20% 16V
2635	4822 122 33147	20nF 20%
2645	4822 122 33147	20nF 20%
2646	4822 122 33104	100nF 10% 63V
2664	4822 121 51309	1,2nF 5% 50V
2665	4822 121 51309	1,2nF 5% 50V
2666	4822 121 51325	2,2nF 5% 50V
2667	4822 121 51325	2,2nF 5% 50V
2668	4822 121 51324	1,2nF 5% 50V
2669	4822 121 51324	1,2nF 5% 50V
2670	4822 124 41528	100µF 20% 25V
2671	4822 124 41528	100µF 20% 25V
2673	4822 124 41577	4,7µF 20% 50V
2674	4822 122 33147	22nF 20%
2675	4822 122 33147	22nF 20%
2690	4822 124 41572	220µF 20% 35V
2691	5322 121 42661	330nF 5% 63V
2692	5322 121 42386	100nF 5% 63V
2693	4822 122 33147	22nF 20%
2696	4822 121 42888	27nF 5% 50V
2697	4822 121 51312	2,7nF 5% 50V
2698	4822 121 51312	2,7nF 5% 50V
2699	4822 121 42888	27nF 5% 50V
2700	4822 124 41577	4,7µF 20% 50V
2702	4822 124 22337	22µF 20% 63V
2703	4822 124 23031	470µF 20% 25V
2705	4822 122 33147	22nF 20%
2706	4822 122 33147	22nF 20%
2707	4822 124 41458	4700µF 20% 16V
2708	4822 124 40272	33µF 20% 16V
2709	4822 122 33147	22nF 20%
2710	4822 122 33147	22nF 20%
2711	4822 124 41571	1000µF 20% 16V
2712	4822 124 40272	33µF 20% 16V
2713	4822 124 23031	470µF 20% 25V
2900	4822 122 10166	22nF 30% 16V
2901	4822 124 22027	47µF 20% 25V
2902	4822 122 31465	270pF 10% 50V
2903	4822 122 10166	22nF 30% 16V

3501	5322 116 80445	4,7k 1% 0,125W
3502	5322 116 80429	100k 1% 0,125W
3503	4822 111 30499	4,7Ω 5% 0,33W
3504	4822 111 30499	4,7Ω 5% 0,33W
3505	4822 111 90253	12k 2% 0,125W
3506	4822 116 52389	100Ω 5% 0,5W
3507	5322 116 80427	1k 1% 0,125W
3508	4822 111 90512	24k 2% 0,125W
3509	4822 116 81208	5,6k 1% 0,125W
3510	4822 111 90249	10k 2% 0,125W
3520	4822 101 10685	Trimpot. LIN 4k7 20% 0.05W
3521	4822 116 52407	220Ω 5% 0,5W
3522	4822 111 30515	18Ω 5% 0,33W
3523	4822 111 30511	12Ω 5% 0,33W
3524	5322 116 80426	100Ω 1% 0,125W
3533	5322 111 90268	5,1k 2% 0,125W
3534	4822 111 90197	220k 2% 0,125W
3535	4822 116 53081	12k 1% 0,6W
3539	4822 111 90251	22k 2% 0,125W
3540	4822 111 30499	4,7Ω 5% 0,33W
3541	4822 111 90544	6,8k 2% 0,125W
3542	4822 116 90539	33Ω 5% 0,125W
3543	4822 111 90544	6,8k 2% 0,125W
3551	4822 116 81206	22Ω 1% 0,4W
3552	5322 111 90101	1,8k 2% 0,125W
3553	4822 111 30483	1Ω 5% 0,33W
3554	4822 111 30483	1Ω 5% 0,33W
3555	4822 111 90238	18k 2%
3557	4822 111 90197	220k 2% 0,125W
3560	4822 111 91494	11k 2%
3561	4822 116 90417	150k 2%
3562	4822 111 90568	120k 2% 0,125W
3563	4822 111 90573	56k 2% 0,125W
3564	4822 111 91495	160k 2%
3565	5322 111 90105	27Ω 2% 0,125W

3566	4822 116 81206	22Ω 1% 0,4W
3567	4822 111 90575	82k 2% 0,125W
3568	4822 100 20522	Trimpot. LIN 22k 20% 0,05W
3569	5322 116 80447	470k 1% 0,125W
3574	5322 116 80441	33k 1% 0,125W
3575	5322 116 80445	4,7k 1% 0,125W
3576	4822 116 52848	200k 1% 0,6W
3577	4822 116 90418	1,2k 2%
3578	4822 111 90575	82k 2% 0,125W
3579	4822 116 90417	150k 2%
3580	4822 116 52426	4,7k 5% 0,5W
3581	4822 116 53105	3,3k 1% 0,6W
3582	4822 111 90572	5,6k 2% 0,125W
3584	4822 111 91492	91k 2%
3585	4822 111 90214	100k 2% 0,125W
3586	4822 111 90368	680k 2% 0,125W
3588	4822 116 52472	47k 5% 0,5W
3589	5322 116 80445	4,7k 1% 0,125W
3600	4822 111 90248	2,2k 2% 0,125W
3602	4822 111 90251	22k 2% 0,125W
3603	4822 111 90371	75Ω 2% 0,125W
3604	4822 111 30499	4,7Ω 5% 0,33W
3605	5322 111 90265	1,6k 2% 0,125W
3607	4822 111 90571	3,9k 2% 0,125W
3609	4822 111 30499	4,7Ω 5% 0,33W
3610	4822 111 90373	9,1k 2% 0,125W
3612	4822 116 81165	1M 1% 0,125W
3613	4822 111 90251	22k 2% 0,125W
3617	4822 111 90251	22k 2% 0,125W
3620	4822 111 90238	180k 5% 0,25W
3621	4822 111 90238	180k 5% 0,25W
3622	5322 116 80446	47k 1% 0,125W
3623	4822 111 90238	180k 5% 0,25W
3624	4822 111 90248	2,2k 2% 0,125W
3625	4822 111 90249	10k 2% 0,125W
3626	4822 111 90249	10k 2% 0,125W
3627	4822 111 30499	4,7Ω 5% 0,33W
3628	4822 111 90251	22k 2% 0,125W
3629	4822 111 90197	220k 2% 0,125W
3630	4822 111 90251	22k 2% 0,125W
3634	4822 111 90251	22k 2% 0,125W
3635	4822 111 90251	22k 2% 0,125W
3636	4822 111 90251	22k 2% 0,125W
3637	4822 111 90251	22k 2% 0,125W
3638	4822 111 90251	22k 2% 0,125W
3639	4822 111 90251	22k 2% 0,125W
3640	4822 111 90251	22k 2% 0,125W
3645	5322 116 80445	4,7k 1% 0,125W
3646	4822 111 90251	22k 2% 0,125W
3647	4822 111 90251	22k 2% 0,125W
3648	5322 111 90096	1,2k 2% 0,125W
3650	4822 111 30483	1Ω 5% 0,33W
3651	4822 111 90197	220k 2% 0,125W
3652	4822 111 30499	4,7Ω 5% 0,33W
3659	4822 111 91183	3,3k 2%
3661	4822 111 90249	10k 2% 0,125W
3665	4822 116 90416	3k 2%
3666	4822 116 90416	3k 2%
3667	4822 116 90418	1,2k 2%
3668	4822 116 90418	1,2k 2%
3669	4822 116 90418	1,2k 2%
3670	4822 116 90418	1,2k 2%
3671	4822 116 90271	2,4k 2%
3672	4822 116 90271	2,4k 2%
3673	4822 111 30508	10Ω 5% 0,33W
3674	4822 111 30508	10Ω 5% 0,33W
3675	4822 111 90251	22k 2% 0,125W
3676	4822 111 90251	22k 2% 0,125W
3677	5322 116 80444	470Ω 1% 0,125W
3678	5322 116 80444	470Ω 1% 0,125W
3679	5322 116 80444	470Ω 1% 0,125W
3680	5322 116 80444	470Ω 1% 0,125W
3681	5322 116 80431	150Ω 5%
3682	5322 116 80431	150Ω 5%
3691	4822 111 90251	22k 2% 0,125W
3692	4822 111 90251	22k 2% 0,125W
3700	4822 111 90163	jumper
3701	5322 116 80445	4,7k 1% 0,125W
3702	4822 111 90425	5,6M 5% 0,125W
3703	4822 116 90541	56k 5% 0,125W
3704	5322 111 90096	1,2k 2% 0,125W
3705	4822 116 90541	56k 5% 0,125W
3706	5322 111 90096	1,2k 2% 0,125W
3707	5322 111 90096	1,2k 2% 0,125W
3708	5322 111 90096	1,2k 2% 0,125W
3709	5322 111 90096	1,2k 2% 0,125W
3724	4822 116 53081	12k 1% 0,6W
3725	4822 111 90253	12k 2% 0,125W
3726	4822 111 90251	22k 5%
3728	5322 116 80445	4,7k 1% 0,125W
3729	4822 116 53081	12k 1% 0,6W
3730	4822 111 90253	12k 2% 0,125W
3731	4822 116 81206	22Ω 1% 0,4W
3736	4822 111 90251	22k 2% 0,125W
3737	5322 116 80445	4,7k 1% 0,125W
3738	4822 111 90251	22k 2% 0,125W
3739	4822 111 90423	4,7M 5% 0,125W
3740	5322 111 90113	560Ω 2%
3743	5322 116 80427	1k 1% 0,125W
3744	5322 111 90113	560Ω 2%
3745	4822 111 90423	4,7M 5% 0,125W
3747	5322 116 80441	33k 1% 0,125W
3748	4822 111 90571	3,9k 2% 0,125W
3775	4822 111 90251	22k 2% 0,125W
3776	5322 116 80427	1k 1% 0,125W
3779	5322 111 90306	750Ω 5%
3800	4822 111 90163	jumper
3801	4822 111 90163	jumper
3802	4822 111 90163	jumper
3803	4822 111 90163	jumper
3804	4822 111 90163	jumper
3805	4822 111 90163	jumper
3806	4822 111 90163	jumper
3807	4822 111 90163	jumper
3808	4822 111 90163	jumper
3809	4822 111 90163	jumper
3810	4822 111 90163	jumper
3811	4822 111 90163	jumper
3812	4822 111 90163	jumper
3813	4822 111 90163	jumper
3814	4822 111 90163	jumper
3815	4822 111 90163	jumper
3816	4822 111 90163	jumper
3817	4822 111 90163	jumper
3818	4822 111 90163	jumper
3819	4822 111 90163	jumper
3820	4822 111 90163	jumper
3821	4822 111 90163	jumper
3822	4822 111 90163	jumper
3823	4822 111 90163	jumper
3824	4822 111 90163	jumper
3825	4822 111 90163	jumper
3826	4822 111 90163	jumper
3827	4822 111 90163	jumper
3828	4822 111 90163	jumper
3829	4822 111 90163	jumper

3830	4822 111 90163	jumper
3831	4822 111 90163	jumper
3832	4822 111 90163	jumper
3833	4822 111 90163	jumper
3834	4822 111 90163	jumper
3835	4822 111 90163	jumper
3851	4822 111 90163	jumper
3900	4822 116 52463	22k 5% 0,5W
3901	4822 116 52463	22k 5% 0,5W
3902	4822 116 52366	4,7Ω 5% 0,5W
3903	4822 116 52472	47k 5% 0,5W
3904	4822 116 52501	150k 5% 0,5W
3905	4822 116 52426	4,7k 5% 0,5W
3906	4822 116 52433	820Ω 5% 0,5W
3907	4822 116 52433	820Ω 5% 0,5W
3910	4822 116 52426	4,7k 5% 0,5W
3911	4822 116 52426	4,7k 5% 0,5W
3912	4822 116 52463	22k 5% 0,5W
3913	4822 116 52426	4,7k 5% 0,5W
3914	4822 116 52463	22k 5% 0,5W

6500	4822 209 72587	TCA0372DP2
6501	4822 209 73234	TDA8808T/C3
6502	4822 130 44121	BC338
6503	4822 209 73235	TDA8809T/C2
6504	4822 209 72587	TCA0372DP2
6510	5322 130 32962	BZV85-C6V2
6512	4822 209 83274	NJM4560D
6513	4822 130 30621	1N4148
6515	4822 130 30621	1N4148
6516	5322 130 42012	BC858
6517	5322 130 42012	BC858
6519	5322 130 30684	1N4002
6520	4822 130 42131	BF550
6523	4822 209 70422	MN4264-15
6525	4822 130 61207	BC848
6526	4822 130 61207	BC848
6527	5322 130 41983	BC858B
6530	4822 209 61011	MC68HC05C8P/ZC99684
6531	4822 130 42675	BC818
6535	4822 209 83163	LM833N
6536	4822 209 83163	LM833N
6538	5322 130 30684	1N4002
6540	4822 209 11157	SAA7220
6541	4822 209 73236	TDA1543
6542	4822 130 42675	BC818
6543	4822 130 42675	BC818
6544	4822 130 42675	BC818
6545	4822 130 42675	BC818
6546	4822 209 83274	NJM4560D
6547	4822 130 30621	1N4148
6548	4822 130 30621	1N4148
6549	4822 209 60775	SAA7310
6551	5322 130 30684	1N4002
6552	4822 130 30621	1N4148
6553	4822 130 30621	1N4148
6554	5322 130 42012	BC858
6555	4822 130 31981	BZX55-C3V9
6557	4822 130 30621	1N4148
6558	4822 130 40938	BC548
6561	4822 130 61207	BC848
6562	5322 130 42136	BC848C
6563	5322 130 42012	BC858
6564	4822 130 61207	BC848
6565	4822 130 61207	BC848
6572	4822 130 34197	BZX55-C12
6577	4822 209 80808	MC7815CT
6580	5322 130 30684	1N4002
6581	5322 130 30684	1N4002
6582	5322 130 30684	1N4002
6583	5322 130 30684	1N4002
6584	5322 130 30684	1N4002
6585	5322 130 30684	1N4002
6586	5322 130 30684	1N4002
6587	5322 130 30684	1N4002
6591	4822 209 71579	TY40408
6592	4822 209 73233	MC79L05ACPRE
6900	4822 209 72226	U3090MG
6901	4822 130 81086	BZX55-C15
6902	4822 130 30621	1N4148
6903	4822 130 40938	BC548
6904	4822 130 40938	BC548
6905	4822 130 30621	1N4148
6906	4822 130 30621	1N4148
6907	4822 130 30621	1N4148

Miscellaneous

BU3	4822 267 30743	HEADPHONE SOCKET
BU-3	4822 267 30522	HEADPHONE SOCKET /00B
SK11	4822 276 12276	TACT SWITCH
SK12	4822 276 12276	TACT SWITCH
SK13	4822 276 12276	TACT SWITCH
SK14	4822 276 12276	TACT SWITCH
SK15	4822 276 12276	TACT SWITCH
SK16	4822 276 12276	TACT SWITCH
SK17	4822 276 12276	TACT SWITCH
SK18	4822 276 12276	TACT SWITCH
SK19	4822 276 12276	TACT SWITCH
SK20	4822 276 12276	TACT SWITCH
SK21	4822 276 12276	TACT SWITCH
SK22	4822 276 12276	TACT SWITCH
1502	4822 242 71349	11,2896 MHz X-TAL
1503	4822 242 70831	4 MHz CER. RES.
1510	4822 253 30009	FUSE 160mA T
1510	4822 253 30217	FUSE 300mA T
1513	4822 130 90661	DISPLAY 6-MT-147GK
1514	4822 214 51772	IR RECEIVER
5001	4822 146 30778	MAINS TRANSFORMER
5001	4822 146 30802	MAINS TRANSFORMER
5502	4822 157 53141	470µH 10%
5503	4822 157 53141	470µH 10%
	4822 218 10257	RC
	4822 218 10293	RC NEUTRAL
	4822 267 40766	CINCH SOCKET 4P
	4822 492 63076	SPRING CLIP
	4822 265 20291	MAINS INLET
	4822 276 11309	MAINS SWITCH
	4822 256 30274	FUSE HOLDER
	4822 276 12523	TACT SWITCH
	4822 444 60606	SAFETY CAP
	4822 401 10895	CLAMP

Tools

4822 322 40066	SERVICE CABLE (14P)
4822 397 30184	CD AUDIO SIGNALS
4822 267 50676	SERVICE CONN (14P)
4822 397 30096	AUDIO TEST DISC 5+5A
5322 130 32182	LED GREEN CQYG11
4822 397 30184	AUDIO TEST DISC 1kHz
4822 321 21284	SERVICE CABLE (4P)
4822 397 60141	AUDIO TEST MAX DIAM
4822 395 50145	TORX SCREWDRIVERSET
4822 395 50132	TORX SCREW SQUARE
4822 395 30204	13TH ORDER TER

Modifications

With A89-117

page	reason
1-1a	/00B added
2-3a	Partslist adapted
3-10a	Headphone socket for /00B added

Service Information

	1989-08-21
	CD600, CD610
	A89-117

Product Service Group CE Audio

(GB)

To adapt the Service Manual the following sheets have been changed/added.

(NL)

Voor het aanpassen van de Service Manual zijn onderstaande pagina's gewijzigd/toegevoegd.

(F)

Afin de pouvoir adapter le Manual Service les feuillets suivants ont été soit modifiés, soit ajoutés.

(D)

Zur Anpassung des Service Manual sind nachstehende Seiten geändert/hinzugefüght.

(I)

Allo scope di adattare il manuale di Servizio sono state variate/aggiunte le sequenti pagine.

1-1-a, 2-1
2-2, 2-3-a
3-9, 3-10-a
4-1